What is claimed is:

1. The combination comprising at least one linear position sensor and at least one degrading surface wherein at least one signal generated by the at least one linear position sensor is used to derive an absolute angular position of a rotating component.

2. The combination of claim 1 wherein the at least one linear position sensor is one of either a Hall-Effect sensor, a magnetoresistive sensor, a giant magnetoresistive sensor, a capacitive sensor, an eddy current sensor, an inductive sensor, a magnetic sensor, an ultrasonic sensor, or an optical sensor.

3. The combination of claim 2 wherein the degrading surface is a radial outer surface located on the rotating component.

4. The combination of claim 3 wherein the at least one signal generated by the at least one linear position sensor is used to derive at least one of the speed of rotation of the rotating component, the amount of angular acceleration of the speed of the rotating component, or the direction of rotation of the rotating component.

5. The combination of claim 2 wherein the degrading surface is an axial face located on the rotating component.

6. The combination of claim 5 wherein the signal generated by the at least one linear position sensor is used to derive at least one of the speed of rotation of the rotating component, the amount of angular acceleration of the speed of the rotating component, or the direction of rotation of the rotating component.

7. The combination of claim 2 wherein there is a first linear position sensor, a first degrading surface, a second linear position sensor, and a second degrading surface, the incline of the first degrading surface being opposite to the incline of the second degrading surface, the first linear position sensor being located to detect a change in a first air gap between the first linear position sensor and the first degrading surface as the rotating component is rotated, and the second linear position sensor being located to detect a change in a second air gap between the second linear position sensor and the second degrading surface as the rotating component is rotated.

8. The combination of claim 7 wherein the first linear position sensor generates a first signal and the second linear position sensor generates a second signal and wherein the position of the rotating component is derived from the formula

$$P = (A-B) / (A+B)$$

Where:

P = the position of the rotating component;

A = the position of the rotating component as derived from the first signal, and

B = the position of the rotating component as derived by the second signal.

9. The combination of claim 8 further comprising a notch in a circular ring, wherein the notch is aligned with the step in the degrading surface such that the notch is used as a reference point to allow for a 360 degree range of motion of the rotating component.

10. The combination of claim 8 wherein the at least one linear position sensor includes an ability to generate at least one signal corresponding to a temperature.

11. The combination of claim 2 wherein the degrading surface covers less than the entire 360 degree surface of a rotating component.

12. The combination of claim 2 wherein the at least one degrading surface is made from material that is at least one of ferromagnetic, magnetic, conductive, or non-ferromagnetic.

13. A method of determining the absolute angular position of a rotating component comprising the steps of:

a. providing at least one linear position sensor;

b. providing at least one rotating component having at least one degrading surface;

c. positioning the at least one linear position sensor such that an air gap exists between the at least one linear position sensor and the at least one degrading surface;

d. detecting at least one signal from the at least one linear

position sensor, the at least one signal being responsive to changes in the air gap between the at least one linear position sensor and the at least one degrading surface; and

e. using the at least one signal to derive the absolute angular position of the rotating component.

14. The method of claim 13 wherein the at least one linear position sensor is one of either a Hall-Effect sensor, a magnetoresistive sensor, a giant magnetoresistive sensor, a capacitive sensor, an eddy current sensor, an inductive sensor, a magnetic sensor, an ultrasonic sensor, or optical sensor.

15. The method of claim 14 wherein the degrading surface is a radial outer surface of the rotating component.

16. The method of claim 15 wherein the at least one signal generated by the at least one linear position sensor is used to derive at least one of the speed of rotation of the rotating component, the amount of angular acceleration of the speed of the rotating component, or the direction of rotation of the rotating component.

17. The method of claim 14 wherein the degrading surface is an axial face of the rotating component.

18. The method of claim 17 wherein the signal generated by the at least one linear position sensor is used to derive at least one of the speed of rotation of the rotating component, the amount of angular acceleration of the

speed of the rotating component, or the direction of rotation of the rotating component.

19. The combination of claim 14 wherein there is a first linear position sensor, a first degrading surface, a second linear position sensor, and a second degrading surface, the incline of the first degrading surface being opposite to the incline of the second degrading surface, the first linear position sensor located to detected a change in a first air gap between the first linear position sensor and the first degrading surface as the rotating component is rotated, and the second linear position sensor being located to detect a change in a second air gap between the second linear position sensor and the second degrading surface as the rotating component is rotated.

20. The method of claim 19 wherein the first linear position sensor generates a first signal A and the second linear position sensor generates a second signal B wherein the position of the rotating component is derived from the formula

$$P = (A-B) / (A+B)$$

Where:

P = the position of the rotating component;

A = the position of the rotating component as derived from the first signal, and

B = the position of the rotating component as derived by the second

signal.

21. The method of claim 14 further comprising a notch in a circular ring, wherein the notch is aligned with the step in the degrading surface such that the notch is used as a reference point to allow for a 360 degree range of motion of the rotating component.

22. The method of claim 14 wherein the at least one linear position sensor includes an ability to generate a signal corresponding to a temperature.

23. The method of claim 14 wherein the degrading surface covers less than the entire 360 degree surface of a rotating component.

24. The method of claim 14 wherein the at least one degrading surface is made from material that is at least one of ferromagnetic, magnetic, conductive, or non-ferromagnetic.

SEQUENCE LISTING

None.